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June 14th, 2024

Ms. Sophie Shulman
Deputy Administrator
National Highway Traffic Safety Administration
1200 New Jersey Avenue SE
Washington, D.C. 20590

RE: Ford Motor Company's Response to "Electric-Powered Vehicles: Electric Powertrain Integrity Global Technical Regulation No. 20, Incorporation by Reference" Notice for Proposed Rulemaking (NPRM) (Docket No. NHTSA-2024-0012)

Dear Deputy Administrator Shulman:

Ford Motor Company (Ford), the largest producer of vehicles assembled in the United States, with offices at One American Road, Dearborn, Michigan 48126-2798, appreciates the opportunity to provide comments for the NPRM to establish Federal Motor Vehicle Safety Standard (FMVSS) 305a with performance and risk mitigation requirements for the propulsion battery on electric vehicles, published by the National Highway Traffic Safety Administration (NHTSA) in the Federal Register, Docket No. NHTSA-2024-0012.

Ford supports the agency's proposal to establish FMVSS 305a and set performance and risk mitigation standards for propulsion batteries on electric vehicles. Ford participated in preparing and is fully aligned with the comments submitted by the Alliance for Automotive Innovation (Auto Innovators). Ford is separately submitting these additional comments to highlight potential improvements to the proposed standard and to emphasize the importance of these changes from an OEM perspective.

Manufacturers Should Have the Option of Demonstrating Compliance with REESS Performance Requirements by Testing at Either a Component or Vehicle Level.

Consistent with the comments submitted by Auto Innovators, Ford generally supports the agency's proposed performance requirements to establish controls for managing safe REESS operation. These tests include Overcharge Protection, Over-Discharge Protection, Overcurrent Protection, Over-Temperature Protection, and External Short-Circuit Protection. However, the agency's proposal states that each of these tests must be conducted at the full vehicle-level. As set forth in the comments submitted by Auto Innovators, this proposed procedure is, in many cases unnecessary and inefficient because vehicle-level testing does not introduce any unique

data noise factors or failure modes. Additionally, the features in the tests listed above are implemented in the battery management system (BMS) and do not have any dependency on the vehicle controllers. Manufacturers should instead be able to certify compliance with these requirements through either vehicle-level or component-level tests, including bench tests of the complete REESS or with the REESS subsystem at the battery pack component level to harmonize with the requirements of UN R100.03.

The agency doesn't cite any data or analysis suggesting that any of these tests need to be conducted at the full-vehicle level to provide accurate data predictive of real-world performance. As a practical matter, Ford (and presumably other OEMs) currently lack ready access to facilities sufficiently large to conduct some of the non-destructive tests at the full-vehicle level. Allowing these tests to be performed at either the vehicle or component level likewise reduces the complexity of certifying compliance where the same REESS is used in multiple vehicle lines.

The agency's proposal includes its expectation that none of these requirements will result in significant cost to manufacturers. This expectation, however, can only be fulfilled if manufacturers are permitted to conduct these tests at either the vehicle or component level. For all these reasons, Ford suggests that the proposed standard be modified to permit vehicle or component level testing for each of the referenced tests.

Manufacturers Should Not Be Required to Initiate a Thermal Runaway to Demonstrate Compliance with the Thermal Event Warning Requirement.

The 600°C heater test proposed by the agency to demonstrate compliance with the thermal event warning requirement is unnecessarily destructive and burdensome in that it requires the initiation of a thermal runaway to confirm the illumination of a warning light. For all the reasons stated in the comments submitted by Auto Innovators, Ford suggests that this requirement in the standard be harmonized with the requirements of UN R100.03, in which the thermal event warning strategy is documented to demonstrate the functionality of the warning and includes vehicle-level test results with evidence of the warning strategy and functionality, which is consistent with UN R100.03 Part 1 evidence.

If the agency concludes that a performance test is nonetheless appropriate, Ford suggests that an alternative test could be utilized to provide a much simpler yet effective means of confirming the functionality of the thermal event warning. By initiating the appropriate electronic communication signal to simulate a thermal event and trigger the thermal event warning, the warning can be appropriately tested and confirmed to function as designed without the safety risk and waste associated with a full vehicle destructive test.

At Ford, the safety of our customers and the integrity of our products remains a top priority, and we appreciate the opportunity to submit these comments for NHTSA's consideration and look forward to continuing to work collaboratively with NHTSA to advance motor vehicle safety. If you have any questions regarding this submission, please contact Kris Cooney (email: kcooney1@ford.com or phone: 313-805-4728).

Sincerely,



Emily Frascaroli